CLAIMS

What is claimed is:

1. A method for programming an electrically erasable and programmable memory of a microprocessor of an electronic control unit, said electronic control unit being at least one of a controller and regulator associated with at least one electronic system of a road vehicle, the method comprising the steps of:

a. generating at least one memory-map in a memory area defined in said electrically erasable and programmable memory, said memory area being at least one of (i) a program memory, (ii) a data memory and (iii) a combination program and data memory,

b. generating a description data file, said description data file including an equipment description associated with electronic control unit types acceptable for receiving at least one preselected program, said description data file further including at least one hardware number corresponding to an equipment version associated with at least one of said electronic control unit types,

c. generating from said memory-map and said description data file a programming data file, said programming data file including said equipment description and said at least one preselected program,

d. reading said programming data file into a diagnostic device,

e. transferring said programming data file from said diagnostic device to said electronic control unit,

f. utilizing said electronic control unit, determining based on said equipment description if said electronic control unit corresponds to at least one of said electronic control unit types acceptable for receiving said at least one

preselected program, and

g. by said electronic control unit itself, programming said at least one preselected program into said electrically erasable and programmable memory of said electronic control unit in a manner specified by said programming data file when said electronic control unit corresponds to at least one of said electronic control unit types acceptable for receiving said at least one preselected program.

2. The method according to claim 1, wherein steps a to d are effected in a manner that is one of coordinated timewise and un-coordinated timewise, and steps e to g are effected in a manner that is coordinated timewise.

3. The method according to claim 1, wherein said equipment description associated with said electronic control unit types acceptable for receiving said at least one preselected program includes a plurality of hardware numbers corresponding to equipment versions associated with a plurality of said electronic control unit types.

4. The method according to claim 1, wherein said equipment version is restricted by one of a serial number and a range of serial numbers.

5. The method according to claim 1, wherein said equipment version is restricted by one of a software number associated with a software version and a range of software numbers associated with a software version.

6. The method according to claim 1, wherein said equipment version is restricted by (i) one of a serial number and a range of serial numbers and (ii) one of a software number associated with a software version and a range of software numbers associated with a software version.

7. The method according to claim 1, wherein said step of transferring said programming data file from said diagnostic device into said electronic control unit includes transferring said programming data file serially as a sequence of data segments.

8. The method according to claim 1, wherein said step of generating said programming data file includes encoding said programming data file, and wherein said step of transferring said programming data file to said electronic control unit includes decoding said programming data file utilizing said electronic control unit.

9. The method according to claim 1, wherein said step of generating said programming data file includes compressing said programming data file, and wherein said step of transferring said programming data file to said electronic control unit includes decompressing said programming data file utilizing said electronic control unit.

10. The method according to claim 1, wherein said programming data file includes at least one checksum, and further comprising the step of checking said checksum utilizing said electronic control unit.

11. The method according to claim 1, wherein said step of transferring said programming data file from said diagnostic device to said electronic control unit is effected using radio transmission and reception means.

12. The method according to claim 1, wherein steps a to g are effected remotely while said electronic control unit is in service.

13. The method according to claim 1, wherein said electrically erasable and programmable memory is a flash electrically erasable and programmable memory.